

### **ABSTRACT OF THE DISCLOSURE**

The present subject matter generally concerns the detection of tire related anomalies in a pneumatic tire using Doppler Micro-Power Impulse Radar technology together with radar signal analyzation methodologies. More particularly, the present  
5 disclosure relates to methods and apparatus for the detection of anomalies in pneumatic tires including tread separation, tread wear, uneven tread wear, tire balance and foreign body detection. The signal analysis used differentiates various of the detectable anomalies by analyzing the radar signals based on  
10 ranges of harmonics.